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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NGUYEN, ANH T

ART UNIT	PAPER NUMBER
2174	5

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 March 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This final action is responsive to paper number 4, Amendment A, filed 3/01/04.

2.   Claims 1-26 are pending in this application. Claims 1, 2, 7, 14, 15, and 20 are

independent claims. In Amendment A, claims 1, 2, 7, 13, 14, 15, 20 and 26 were amended. This

action is Final.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

4.   Claims 1, 13-14, and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter, which

was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. The specification fails to mention or teach a method for determining a range

of each bucket based on a number of the distribution keys associated with the sampled set of data

items that fall within a range. It is not clear how the number of the distribution keys associated

with the sampled set of data items that fall within said range is used to determine the range since

there is lack of descriptive support for these claims in the specification.

For purposes of applying prior art, the Examiner will give the amended claims their

broadest reasonable interpretation in light of the supporting disclosure.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6.   Claims 1-3, 5, 13-16, 18 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated

by Applicant's Admitted Prior Art ("AAPA").

Regarding independent Claim 1, AAPA discloses a method for distributing data items

from a particular set of data into a plurality of buckets based on distribution keys associated with

said data items, the method comprising the steps of:

randomly selecting data items from said particular set of data to produce a sampled set of

data items(page1, lines 13-14);

determining a range for each bucket of said plurality of buckets based on a number of the

distribution keys associated with said sampled set of data items that fall within said range,

assigning said range to each bucket of said plurality of buckets, and distributing each data item in

said particular set of data to the bucket that has been assigned the range into which falls the

distribution key of the data item (page 2, lines 8-10).

Regarding independent Claim 2, AAPA discloses a method for distributing data items

from a particular set of data into a plurality of buckets based on distribution keys associated with

said data items, the method comprising the steps of randomly selecting data items from each

subset of a plurality of subsets of said particular set of data (page 1, lines 13-14; page 2, lines 15-

17, *in each partition of a partitioned set of data*), determining a plurality of ranges based on the

distribution keys associated with the sampled set of data items, assigning said plurality of ranges

to said plurality of buckets, and distributing each data item in said particular set of data to the

bucket that has been assigned the range into which falls the distribution key of the data item

(page 2, lines 8-10).

Regarding Claim 3, AAPA discloses wherein the step of randomly selecting data items

from each subset of a plurality of subsets of said particular set of data includes randomly

selecting data items from each partition of a partitioned table (Page 2, lines 15-17, *in each

partition of a partitioned set of data*).

Regarding Claim 5, AAPA discloses the steps of assigning the plurality of buckets of

processes, and causing each process of said plurality of processes to perform, in parallel with the

other processes of said plurality of processes, and operation on the data items contained in any

buckets assigned to the processes (Page2, lines 12-19).

Regarding Claim 13, AAPA discloses determining ranges that contain an approximately

equal amount of distribution keys associated with said sampled set of data items (Page 2, lines 8-

14).

Claim 14 is similar to claim 1 and therefore is rejected under similar rationale.

Claim 15 is similar to claim 2 and therefore is rejected under similar rationale.

Claim 16 is similar to claim 3 and therefore is rejected under similar rationale.

Claim 18 is similar to claim 5 and therefore is rejected under similar rationale.

Claim 26 is similar to claim 13 and therefore is rejected under similar rationale.

Claim Rejections - 35 USC § 103

1.　　The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.　　Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's Admitted Prior Art ("AAPA").

Regarding Claim 4, AAPA discloses the method for distributing data items from a

particular set of data into a plurality of buckets. AAPA does not specifically disclose the use of

subsets of data stored in buffers in volatile memory (i.e. RAM), that represent results of one or

more previously performed operations. Official Notice is given that the use of temporary

buffered dynamic memory is notoriously well known in the art. It would have been obvious to an

artisan at the time of the invention to combine the use of buffers in volatile memory to store data

items waiting to be distributed to buckets.

Claim 17 is similar to claim 4 and therefore is rejected under similar rationale.

3.　　Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's Admitted Prior Art ("AAPA") in view of Megiddo (US 6,182,070).

Regarding Claim 6, while AAPA discloses a method for distributing data items from a

particular set of data into a plurality of buckets. AAPA does not particularly disclose the step of

selecting a distinct random seed for each subset of the plurality of subsets of said particular set of

data. Megiddo discloses a method of distributing data items from the dataset based on random

seeds by selecting a distinct random seed for each subset of the plurality of subsets of said

particular set of data (col.3, line 65- col.4, line 1, *dataset based on random seeds*). It would have

been obvious for an artisan at the time of the invention to combine Megiddo's method with

AAPA in order to achieve the best random sampling of data thus increasing efficiency of parallel

processing.

Claim 19 is similar to claim 6 and therefore is rejected under the same rationale.

4.   Claims 7, 12, 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's Admitted Prior Art ("AAPA") in view of Ogi (US 5,854,938).

Regarding Claim 7, while AAPA discloses a method for distributing data items from a

particular set of data into a plurality of buckets based on distribution keys associated with said

data items, the method comprising the steps of randomly selecting data items from each subset of

a plurality of subsets of said particular set of data (page 1, lines 13-14; page 2, lines 15-17),

determining a plurality of ranges based on the distribution keys associated with the sampled set

of data items, assigning said plurality of ranges to said plurality of buckets, and distributing each

data item in said particular set of data to the bucket that has been assigned the range into which

falls the distribution key of the data item (page 2, lines 8-10). AAPA does not disclose the

particular set of data to be durably stored on a plurality of durable storage units, and the step of

randomly selecting data items includes randomly selecting durable storage units from said

plurality of durable storage units and using the data items stored on said randomly selected

durable storage units as the sampled set of data items. Ogi teaches a parallel processor apparatus

wherein the particular set of data is durably stored on a plurality of durable storage units, and the

step of randomly selecting data items includes randomly selecting durable storage units from

said plurality of durable storage units and using the data items stored on said randomly selected

durable storage units as the sampled set of data items (Fig.3, col.14, lines 41-43, *plural buckets*

are stored at random). It would have been obvious to an artisan at the time of the invention to

combine Ogi's teaching with AAPA so that more data can be stored and accessed quickly and

efficiently.

Regarding claim 12, Ogi discloses wherein said operation is specified in a database

command, the method further comprising receiving with said database command data that

indicates how much of said particular set of data to randomly select to produce said sampled set

of data items (col.3, lines 30-37, *"Group By" phrase in SQL statement*).

Claim 20 is similar to claim 7 and therefore is rejected under similar rationale.

Claim 25 is similar to claim 12 and therefore is rejected under similar rationale.

5.   Claims 8, 10, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's Admitted Prior Art ("AAPA") in view of Couch (US 6,604,096).

Regarding Claim 8, while AAPA discloses a method of randomly selecting data items

from said particular set of data to produce a sampled set of data items (Page 1, lines 13-14),

AAPA does not particularly disclose selecting a specified percentage of data items in said

particular set of data. Couch teaches a method for querying data, in which a specified percentage

of data items in said particular set of data (Fig.6, col.9, lines 49-51, *percentage designation*

control 120 may be used to select the amount of data). It would have obvious to an artisan at the

time of the invention to combine Couch's teaching with AAPA because it provides a more even

distribution of data thereby resulting in more efficient parallel processing.

Regarding claim 10, Couch discloses the step of receiving from a user, data that specifies said percentage (col.14, lines 1-2, *configured to receive a user selection of a percentage of the data*).

Claim 21 is similar to claim 8 and therefore is rejected under similar rationale.

Claim 23 is similar to claim 10 and is therefore rejected under similar raionale.

6.   Claims 9, 11, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Ogi (US 5,854,938) and in further view of Couch (US 6,604,096).

Regarding Claim 9, while AAPA in view of Ogi discloses a method of randomly selecting data items from said particular set of data to produce a sampled set of data items (Page 1, lines 13-14). The modified AAPA does not particularly disclose selecting a specified percentage of data items in said particular set of data. Couch teaches a method for querying data, in which a specified percentage of data items in said particular set of data (Fig.6, col.9, lines 49-51, *percentage designation control 120 may be used to select the amount of data*). It would have obvious to an artisan at the time of the invention to combine Couch's teaching with the modified AAPA because it provides a more even distribution of data thereby resulting in more efficient parallel processing.

Regarding Claim 11, Couch discloses the method of Claim 9 further comprising the step of receiving , from a user, data that specifies said percentage (Couch, col.14, lines 1-2, "configured to receive a user selection of a percentage of the data").

Claim 22 is similar to claim 9 and therefore is rejected under similar rationale.

Claim 24 is similar to claim 11 and therefore is rejected under similar rationale.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-26 have been considered but are moot in

view of the new ground(s) of rejection. Applicant's arguments have been noted. However, the

new rejections are made under AAPA, Megiddo, Ogi and Couch.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Anh T Nguyen whose telephone number is (703) 305-8649. The

examiner can normally be reached on Mon.-Fri. (7:00 a.m.- 4:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kristine Kincaid can be reached on (703) 308-0640. The fax phone numbers for the

organization where this application or proceeding is assigned are as follows:

(703) 746-7238 [After Final Communication]

(703) 746-7239 [Official Communication]

(703) 746-7240 [For status inquiries, Draft Communication]

Information regarding the status of an application may be obtained from the Patent

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is

(703) 305-3900.

<div style="text-align: right">

Anh T Nguyen
Examiner
Art Unit 2174

KRISTINE KINCAID
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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